

THE PUBLIC HEALTH IMPACT OF CAFFEINE IN COFFEE

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Introduction

Caffeine is the most popular psychoactive substance in the world and one of the most sold coffee, tea and soft drinks products. One of the most important sources of caffeine is coffee. Due to its widespread population consumption, scientists have expressed interest in determining the adverse effects of excessive caffeine consumption in coffee that may affect human health. Also for the population, caffeine has many important physiological aspects such as central nervous system stimulation, diuresis and gastric acid secretion [1] but can cause tremor, nausea, nervousness and seizures [2] but also mutation effects such as DNA inhibition [3]. Careful consumption of products containing caffeine in cardiovascular disease, HTA and renal dysfunction is recommended [4]

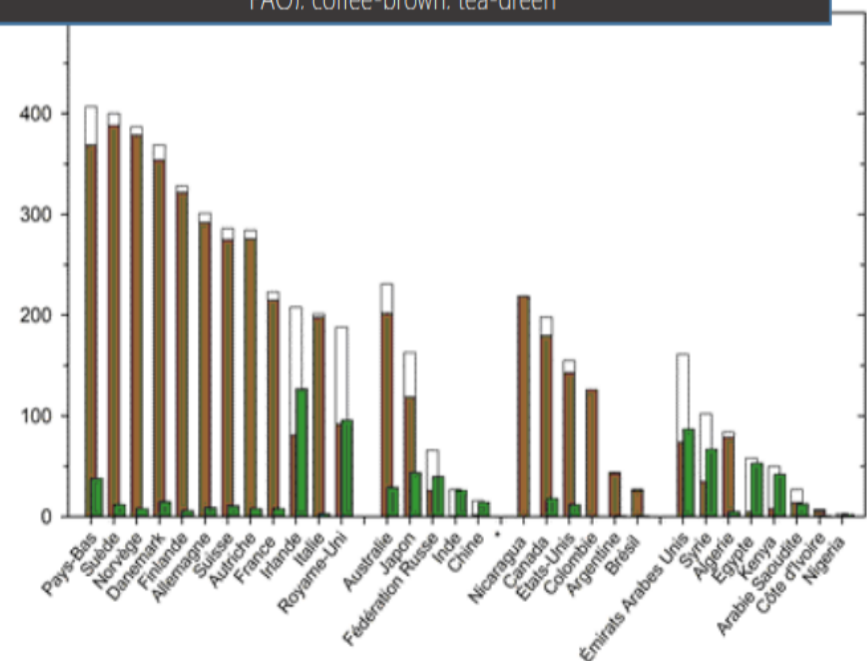
Results

Beneficial effects and adverse effects of caffeine on the human body are presented. Among the adverse effects are the differences between green coffee and roasted coffee. Pollutants represented by PAHs are highlighted by the values obtained in the study. This analysis is motivated by the high consumption of coffee in the world and the high levels of harmfulness of these pollutants when the maximum residue levels set by current legislation are exceeded, knowing that the effect of these pollutants is cumulative over time, as they are deposited especially in the kidneys and liver, and their lipophilic character rapidly penetrates the cell membrane, hence their carcinogenic and genotoxic character.

Table 1. The main constituents of green coffee

Chemical composition	Contents	
	Average value	Value variation
Water soluble extract	33	29,0-36,2
Proteins		8,7-12,2
Lipids	12,6	8,3-17
Reducing sugars (glucose)		0-0,5
Reducing sugars after inversion (sucrose)		2-9
Sucrose	6-7	
Fibre		10-11,7
Citric acid		0,5-1,15
Malic acid		0-0,5
Oxalic acid		<0,2
Chlorogenic acids (phenolic compounds)	1,45	0,9-2,6
Caffeine	0,63	0,24-1,2
Trigonelline	4,0	3,0-5,4
Minerals		

Graphic 1: daily caffeine consumption / number of inhabitants in 1995 (source FAO): coffee-brown: tea-green



Conclusion

High PAH concentrations in roasted coffee beans were found in this study compared to green coffee, but which did not exceed the maximum limits allowed by the current regulation (maximum admissible limit = 2 µg / kg).

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